



2. PICTURING ENERGY



Activity overview

This activity teaches students to read latitude and longitude in order to locate energy facilities and key energy production regions in Canada.

Grade level

- ▷ K–12

Time required

- ▷ 30 minutes

Materials

- ▷ Provincial and territorial flags (14)
- ▷ Image cards (40)
- ▷ Coloured chains (4)

Set-up

Disperse the image cards around the perimeter of the map.

Introduction

Briefly review the five essential components of a map (title, border, compass, legend and scale) and how to use a legend (see the lesson “Understanding Canada’s Energy Mix” for detailed instructions). Ask students if everything they see on the map physically exists in real life. Point out the white lines of latitude and longitude on the map and explain that although they appear on the map, you cannot actually see them in real life.

The horizontal lines on the map are lines of latitude, also known as “parallels”; they measure north and south positions between the Earth’s poles. To show that these lines never touch, choose three volunteers from your class and ask each of them to follow one line of latitude. Lines of longitude run vertically on the map. Explain that these imaginary lines measure degrees east and west, meet at the poles and are farthest apart at the equator. Again, ask three volunteers from your class to follow a line of longitude starting at the northernmost point on the map. Have students describe what is happening as they move south toward the equator. Together, lines of latitude and longitude help us find the exact location of places and objects on the Earth.

Assess your students’ understanding by asking them to find the latitudinal and longitudinal coordinates of:

- ▷ their hometown
- ▷ the capital of Canada (place the Canadian flag here once the coordinates have been found)
- ▷ the capital cities of each province and territory (have students mark them with the correct provincial or territorial flags)

Development

Ask your students to read out the coordinates on the back of the image cards and place them, image side up, in their correct locations on the map. When all cards have been placed on the map, walk around the perimeter and look at all of the images. Lead a class discussion about Canada’s energy mix based on what they see on these cards. Ask students what they have learned about Canada from the location of the images. Why are there more images in one province or territory than others? Can they see any patterns? Do they think any images are missing? What might be some of the interrelationships between the images? Ask students to develop questions based on the images and share them with the class.





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Conclusion

Connect Canada's landform regions to the images on the map. Using the chains provided in the trunk, have students find Canada's different landform regions (Cordillera, Interior Plains, Canadian Shield, Great Lakes–St. Lawrence Lowlands, Appalachian, Arctic Lands). What connections can students make between the location of the landforms and the location of the various types of energy produced? How might some images apply to more than one location? Explain.

Extend your geographic thinking

Have students clear the cards off the map and ask them to stand on areas of Canada that are highly populated. What criteria did they use to determine that these are highly populated areas? Next, have students stand on mountainous regions. How were they able to identify these regions? Finally, ask your students what kind of map they are standing on (they could answer either “a thematic map” or “a physical map”). How would this map be different if it were a political map? A road map? A climate map? How might the energy story change?

Links to the Canadian National Standards for Geography

Essential Element 1: The World in Spatial Terms

- ▷ Personal directions (e.g., left/right, up/down, front/back)
- ▷ Latitude, longitude and the global grid
- ▷ Map types (e.g., topographic, navigational, thematic)
- ▷ Map projections (e.g., size, shape, distance and direction)
- ▷ Major cities of the provinces

Essential Element 2: Places and Regions

- ▷ Factors that influence people's perceptions of places and regions
- ▷ Regional analysis of geographic issues and questions

Essential Element 3: Physical Systems

- ▷ Basic components of Earth's physical systems (e.g., landforms, water and weather)

Essential Element 4: Human Systems

- ▷ Patterns of land use and economic activity in the community (e.g., agriculture, industrial, commercial, residential, educational, recreational)
- ▷ Human settlement patterns and land use
- ▷ Regional development in Canada and the world